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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/813,314

03/30/2004

David P. Kippie

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EXAMINER

FIGUEROA, JOHN J

ART UNIT

PAPER NUMBER

1712

MAIL DATE

DELIVERY MODE

05/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/813,314

Applicant(s)

KIPPIE ET AL.

Examiner

John J. Figueroa

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission (amendment), filed on March 13, 2007. The request has been deemed proper and this application has been hereby examined in view of said amendment.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 4 and 6 (and claims 2, 3, 5, 9 and 10 that depend therefrom) are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no written description support in the instant specification for a monovalent cation containing well fluid *comprising a single brine system* as recited in the rejected claims.

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4. Claims 11, 15 and 17 (and claims 12-14, 16 and 18 that depend therefrom) are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no written description support in the instant specification for limiting the aqueous monovalent brine system to comprise "at least 90% of the well fluid" as recited in the rejected claims.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 11, 15 and 17 (and claims 12-14, 16 and 18 that depend therefrom) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. The phrase "the aqueous monovalent brine system comprises *at least 90%* of the well fluid" is indefinite because it is unclear as to whether the recited range is by total well fluid weight, volume or other measurement.

7. Claims 1-6 and 9-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

The claims are indefinite because independent claims 1, 4, 6, 11, 15 and 17 recite a "monovalent cation containing well fluid *comprising* an aqueous monovalent brine system and ... a starch derivative ... wherein the aqueous monovalent brine

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system *consists essentially* of at least 0.6 equivalents per liter of a water soluble monovalent cation salt ...". This language is thus reciting "comprising of" transitional phrase language for the well fluid but "consisting essentially of" language for the brine system. It is unclear from this language in the claims as to whether the well fluid can further "comprise", e.g., a second aqueous solution system that is not necessarily a monovalent brine system or, alternatively, if the well fluid recited in the claim is intended to be limited to "comprising" a single (only one) monovalent brine solution.

The claims are further indefinite because it is unclear from the specification and the claims' language as to exactly which material elements the transitional phrase "consisting essentially of" is excluding from said monovalent brine system. It is also uncertain as to whether the well fluid can *comprise* a component that can be considered to materially affect the basic characteristics of *the monovalent brine system*, but is present in the *well fluid* as a whole (e.g., in a colloid or in an oil-in-water emulsion system.) There is no disclosure in the specification that will allow a person of ordinary skill in the art to determine which common additive/component (such as a monovalent formate salt or bridging agent) would materially affect the novel characteristics of the brine solution system recited in the amended claims and thus excluded by the "consisting essentially of" language. See MPEP 2111.03.

For example, in accordance with the recitation of the instant independent claims, even if the recited brine system *consisted of* 0.6 equivalents per liter of a monovalent salt and a starch derivative, the well fluid can still further *comprise, inter alia*, additional water, monovalent salts and/or divalent salts. A resultant well fluid can comprise, e.g.,

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90% of a monovalent brine system (consisting essentially of water, 0.6 equivalents of monovalent halide salts and a starch derivative) and 10% of additional water and/or formate salts (if additional water is added to the brine to form the well fluid, the brine is further diluted.) Accordingly, the instant claims can read on a well fluid having a brine of about 0.5 equivalents of monovalent salts and a starch derivative, as long as it has the recited shear properties.

Moreover, the phrase "wherein the *monovalent* cation salt is substantially free of *divalent* cations" in independent claims 1, 4, 6, 11, 15 and 17 is vague and confusing. It is extremely unclear as to how a *monovalent cation* salt compound can contain a *divalent cation* in the first place.

For purposes of the instant Office Action, the independent claims will be given its broadest possible interpretation and are thus interpreted to encompass an embodiment wherein the resultant well fluid can, e.g., in addition to containing the recited 90% of an aqueous monovalent brine system, can further comprise, e.g., 10% or less of a second "system" or component containing additional water, monovalent salts and/or divalent salts.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-6 and 9-18 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent Number (USPN) 5,804,535 to Dobson et al., hereinafter ('Dobson').

The arguments and grounds of the instant rejection had been previously presented in the Office Actions of May 4, 2006 and November 13, 2006 and are repeated herein (with various modifications).

Dobson discloses a well drilling fluid and a process for increasing the low shear rate viscosity thereof, said drilling fluid formed from adding a biopolymer viscosifier; a pre-gelatinized amylopectin starch derivative and, optionally, a bridging agent (such as potassium chloride or magnesium oxide) to a brine of potassium or cesium formate salt; wherein the amylopectin has been modified by crosslinking by about 25-60%. (See Abstract; col. 2, lines 38-65; col. 3, lines 3-24 and 50-63; col. 12, lines 25-40 and 53-67) The formate brine (monovalent cation salt brine) may contain other compatible water-soluble salts therein (such as potassium chloride, which is disclosed in Dobson as a "bridging agent"; claims 4 and 12 in Dobson). (Col. 6, lines 21-27 and 35-52; See, Table on col. 7 regarding concentration of bridging agent being 0 to 100 lb/bbl. Examiner notes that the well fluid recited in the instant claims *comprises* the brine system. Thus, the claims read on a resultant well fluid *comprising* a brine system with a bridging agent (potassium chloride) and further comprising sufficient water to dissolve a portion of, or all, the bridging agent present in the well fluid.)

Dobson discloses that the biopolymer can be a cellular polysaccharide derivative of high molecular weight produced from microorganisms of the genus *Xanthomonas* (e.g. xanthan gum) or, alternatively, from other bacteria or fungi, such as, succinoglycan-type polysaccharide sugars and polysaccharides derived from microbes of the genus *Pseudomonas*, *Agrobacterium*, *Arthrobacter*, *Rhizobium* and *Sclerotium*. (Col. 4, lines 28-43)

Dobson further discloses examples of the drilling fluid in potassium formate and cesium formate brines having low shear rate viscosities of up to 180,000 centipoises at 121°C. (See Table 4 for data on the fluid of Example 4 which is a potassium formate brine containing a crosslinked pre-gelatinized amylopectin starch and xanthan gum; Tables 7-8 disclosing rheological properties of drilling fluids of Example 7 and 8). In the Examples, the salt solutions disclosed by Dobson are "single brines" that are about 100% of the well fluid. (See, e.g., Examples 4 and 5 on col. 9 and 10; Example 8 on col. 11 and 12) Dobson also discloses that the high shear viscosity of the drilling fluid can be manipulated by the amount of viscosifier present and the concentration of biopolymer viscosifier is 0.5 to 4 lbs/barrel.

Although Dobson does not specifically disclose the high shear rate viscosity at 511 sec<sup>-1</sup>, because Dobson's disclosed drilling fluid and that encompassed by the instant claims have the same composition, then both drilling fluids must inherently have the same rheological and physical properties, such as high shear viscosity.



Dobson further discloses that the bridging agent is preferably potassium chloride, a monovalent cation/halide salt compound (col. 6, lines 48-52), having a concentration of from 0 to 286 grams per liter (Table in col. 7; at least 0.6 eq. per liter).

Accordingly, Dobson discloses a well fluid *comprising* an aqueous monovalent brine system (consisting essentially of water and potassium chloride/potassium formate), wherein said well fluid can further *comprise* additional water, formate salt, bridging agents and/or other salts/additives.

Thus, the instant claims, as amended, remain anticipated by Dobson.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 9, 10, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobson.

Claims 9, 10, 13 and 17 limit the pregelatinized crosslinked amylopectin starch to comprise less than 10% amylase. Although Dobson does not expressly limit the amount of amylase that is present in the starch derivative, it would have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to use, as the starch derivative component for the aqueous fluid disclosed in Dobson, a pregelatinized crosslinked amylopectin starch having the limited amount of amylase that

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is recited in the claims. One skilled in the art would done so to attain a resultant well fluid having a preferred/desired amount of amylase in the starch derivative that is optimal for a specific future use.

Moreover, Applicant has provided no evidence showing the criticality to the claimed invention of the starch derivative component having less than 10% amylase.

Thus, the instant claims are unpatentable over Dobson.

### ***Response to Arguments***

#### **The 35 U.S.C. 112 Rejection (item 6 of OA)**

12. Applicant's arguments in the response section filed with the RCE (hereinafter 'Response') with respect to the 35 U.S.C. 112 rejection in item 6 of the Final Office Action of 11/13/2006 (hereinafter 'OA') have been fully considered but deemed unpersuasive.

Regarding the monovalent cation salt being "substantially free of divalent cations," a salt compound can only contain one type of cation (in this case, a monovalent cation). A *monovalent cation* salt compound cannot contain a *divalent cation* by definition. Examiner has attached an excerpt from Hawley's Dictionary disclosing the definition of "salt" for Applicant's convenience.

Concerning Applicant's remarks in Response regarding the "consisting essentially of" language in the claims, these remarks were addressed above in paragraph #7 of the instant Action.

Thus, the 35 U.S.C. 112, second paragraph rejection has been maintained.

The 35 U.S.C. 102 Rejection over Dobson (item 7 of OA)

13. Applicant's arguments in Response with respect to the 35 U.S.C. 102(b) rejection as anticipated by Dobson have been fully considered but are deemed unpersuasive.

Applicant's arguments concerning the brine disclosed in Dobson comprising a solution containing a formate salt (and not a halide salt) are misdirectional. As discussed above, the instant claims read on a well fluid *comprising* a brine having a monovalent cation brine solution containing a starch derivative *and* further comprising any other additive/solution, such as additional salt, bridging agent or water. The instant claims are drawn to a **well fluid comprising** (open-ended transitional language) a monovalent cation brine. The claims are not drawn to a brine system. Thus, the claims read on the well fluid disclosed in Dobson because it contains a formate brine, potassium chloride (bridging agent), starch derivative and water. Because the transition phrase language of the instant claims is open-ended, the claims reads on an embodiment wherein up to 100 lbs/barrel of potassium chloride (concentration of bridging agent disclosed in Dobson) are present Dobson's well fluid containing a formate brine.

See MPEP 2111.03:

The transitional phrases "comprising", "consisting essentially of" and "consisting of" define the scope of a claim with respect to what unrecited additional components or steps, if any, are excluded from the scope of the claim. ... The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d

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1837, 1843 (Fed. Cir. 2004) ("like the term comprising, 'the terms containing' and mixture' are open-ended."). *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition comprising' in a method claim indicates that the claim is open-ended and allows for additional steps."); *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts"). In *Gillette Co. v. Energizer Holdings Inc.*, 405 F.3d 1367, 1371-73, 74 USPQ2d 1586, 1589-91 (Fed. Cir. 2005), the court held that a claim to "a safety razor blade unit comprising a guard, a cap, and a group of first, second, and third blades" encompasses razors with more than three blades because the transitional phrase "comprising" in the preamble and the phrase "group of" are presumptively open-ended. "The word comprising' transitioning from the preamble to the body signals that the entire claim is presumptively open-ended." *Id.* In contrast, the court noted the phrase "group consisting of" is a closed term, which is often used in claim drafting to signal a "Markush group" that is by its nature closed. *Id.*

Applicant's arguments regarding the well fluid disclosed in Dobson not "consisting essentially of" potassium chloride are misguided. Although Dobson does disclose that the bridging agent (potassium chloride) not be *appreciably* soluble in the liquid used to prepare the fluid, as discussed above in paragraph #9, Dobson does disclose the bridging agent to be present in an amount of 0 to 100 lbs/barrel. Also, although Applicant may be accurate in that the "common ion effect" will promote the solubility in the brine of potassium formate over potassium chloride and thus perhaps less equivalents of KCl present than formate salt in Dobson's fluid) because the well fluid recited in the instant claims can *comprise* additional water present that would dilute

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the brine, the amount of halide salt present can be dissolved and be present in the recited *well fluid* in an amount of less than 0.6 equivalents per liter. Hence, the instant claims read on the well fluid disclosed in Dobson, which contains potassium chloride as a bridging agent.

More importantly, irrespective of the "common ion effect", it is unclear from the specification as to why the presence of potassium formate salt (a monovalent cation salt commonly used in well treating/drilling fluids) would materially alter the characteristics of the claimed well fluid. Applicant has not provided any evidence showing (and there is no disclosure in the specification that will allow a person of ordinary skill in the art to determine) which common additive would materially alter the characteristics of *the well fluid* encompassed by the amended claims. See MPEP 2111.03. (See, *e.g.*, PPG, 156 F.3d at 1355, 48 USPQ2d at 1355 ("PPG could have defined the scope of the phrase consisting essentially of' for purposes of its patent by making clear *in its specification* what it regarded as constituting a material change in the basic and novel characteristics of the invention.")). [Emphasis added] If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," *applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention.* [Emphasis added] In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964).

Applicant's conclusions regarding Dobson not disclosing a well fluid "substantially free of xanthan gum" because preferred embodiments in Dobson contain xanthan gum

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as a viscosifier are misdirectional. "Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments." *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. MPEP 2123.

Furthermore, as previously mentioned, Dobson discloses in col. 4, lines 34-43:

"The biopolymer can be an excellular polysaccharide of high molecular weight produced from microorganisms of the genus *Xanthomonas* (e.g. xanthan gum) *or, alternatively*, from other bacteria or fungi, such as, succinoglycan-type polysaccharide sugars and polysaccharides derived from microbes of the genus *Pseudomonas*, *Agrobacterium*, *Arthrobacter*, *Rhizobium* and *Sclerotium*." (Col. 4, lines 28-43) [Emphasis added.]

Therefore, Dobson is disclosing that the well fluid composition need not contain xanthan gum as a viscosifier, even though preferred embodiments disclosed in Dobson actually do include xanthan gum as the viscosifying component.

Thus, the claims, as amended, remain anticipated by Dobson.

### **Conclusion**

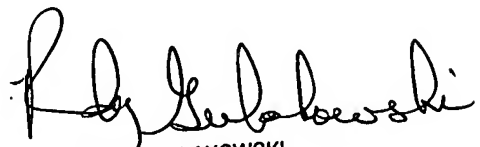
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571) 272-8916. The examiner can normally be reached on Mon-Thurs & alt. Fri 8:00-5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, Examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JJF/RAG

  
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